

A contribution to the knowledge of the Chyromyidae (Diptera) of Italy with description of a new species of *Aphaniosoma* Becker

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A contribution to the knowledge of the Chyromyidae (Diptera) of Italy with description of a new species of *Aphaniosoma* Becker. - The family Chyromyidae is reported from Sicily (eleven species) and from Sardinia (nine species). Additional records of species for mainland Italy are also given. A new species of *Aphaniosoma* is described from France, Sicily and Sardinia. A total of eleven species are new to Italy: *Chyromya miladae*, *Gymnochyromyia fallax*, *G. flavella*, *G. inermis*, *G. mihalyii*, *Aphaniosoma collini*, *A. claridgei*, *A. grisescens*, *A. micromacro*, *A. proximum*, and *A. bifalcatum* sp. n. A list is given of all the seventeen species so far recorded for Italy and its larger islands, together with their data and their distribution in the West Palaearctic.

Keywords: Diptera - Chyromyidae - *Aphaniosoma bifalcatum* sp. n. - Italy - Sardinia - Sicily - France.

INTRODUCTION

The family Chyromyidae of Italy has not been well studied and there are no published records from Sardinia or from Sicily. In the Checklist of the Diptera of Italy (Canzoneri *et al.*, 1995) only three species are listed, namely: *Chyromya flava* (Linnaeus, 1758), *C. oppidana* (Scopoli, 1763) and *Aphaniosoma nigrohirtum* (Hendel, 1933). All occur in the north of Italy. The two species of *Chyromya*, according to the Checklist, also occur in the south. The Catalogue of Palaearctic Diptera (Soós, 1984) gives only *A. nigrohirtum* as specifically occurring in Italy. Thus, both works overlooked or did not accept the record, based on a single specimen deposited in the Museum of Natural History in Vienna, of *A. approximatum* Becker, which was given in Die Fliegen der Paläarktischen Region (Czerny, 1927). However, this specimen was re-examined and it belonged not to *approximatum*, but to a new species, *egregium* Ebejer (1998b); in the same paper, *A. melitensis* Ebejer and *A. propinquans* Collin were also recorded from Italy.

Recent studies of this family of Diptera (Ebejer, 1998a, b; Carles-Tolrá, 2001) have revealed that there are many more species in the Mediterranean. Thus, the list given in the Catalogue of Palaearctic Diptera (Soós, 1984) is now very out of date. During a brief visit to Sicily in the spring of 1999, eleven species of Chyromyidae were

encountered. Dr Merz found nine species in Sardinia in the spring of 2002 and Dr Gatt collected three species in Tuscany in the summer of 2003. They are listed in this article with their data and summarised in Table 1. Eleven of these species are new records for Italy.

TABLE 1: The Italian species of Chyromyidae. (The north and south Italian regions are according to the Checklist of the Diptera of Italy.)

	North Italy	South Italy	Sardinia	Sicily
1. <i>Chyromya flava</i> (Linnaeus)	x			x
2. <i>Chyromya miladae</i> Andersson				x
3. <i>Chyromya oppidana</i> (Scopoli)	x			x
4. <i>Gymnochiromyia fallax</i> Ebejer			x	
5. <i>Gymnochiromyia flavella</i> (Zetterstedt)			x	
6. <i>Gymnochiromyia inermis</i> (Collin)			x	x
7. <i>Gymnochiromyia mihalyii</i> Soós			x	x
8. <i>Aphaniosoma bifalcatum</i> sp. nov.			x	x
9. <i>Aphaniosoma claridgei</i> Ebejer		x	x	x
10. <i>Aphaniosoma collini</i> Lyneborg			x	
11. <i>Aphaniosoma egregium</i> Ebejer	x			x
12. <i>Aphaniosoma grisescens</i> Ebejer			x	
13. <i>Aphaniosoma melitensis</i> Ebejer		x	x	x
14. <i>Aphaniosoma micromacro</i> Carles-Tolrá		x		
15. <i>Aphaniosoma nigrohirtum</i> Hendel	x			
16. <i>Aphaniosoma propinquans</i> Collin	x			x
17. <i>Aphaniosoma proximum</i> Ebejer			x	x

MATERIAL AND METHODS

Specimens were collected by hand-net sweeping only. All the material, which is cited in this article, is dry mounted and deposited in the personal collections of the collectors or their Institutions [Dr Deeming – National Museum of Wales, Cardiff, UK (NMWC); Dr P. Gatt – Rabat, Malta; Dr B. Merz – Museum of Natural History, Geneva, Switzerland (MHNG); and in the author's collection (MJE)].

In the course of this study a number of specimens similar to *A. claridgei* Ebejer could not be identified with certainty. Detailed examination showed these to belong to a new species and this is described below.

For the identification to species, the reader is referred to the following literature: for the genus *Chyromya* - Andersson, 1971, 1976; for *Gymnochiromyia* - Soós, 1979, Ebejer, 1998a; and for *Aphaniosoma* - Collin, 1949; Ebejer, 1993, 1998b, Carles-Tolrá, 2001.

The nomenclature of the hypopygium that is used in this article takes into account the terminology given in the Contributions to a Manual of Palaearctic Diptera (Sinclair, 2000). The term gonostylus is retained for the time being, since there are uncertainties of homologies with regard to this structure. It is so identified because it articulates with the posterior end of the hypandrium and in many *Aphaniosoma* it bears sensory setulae (absent in the species). The term corresponds to terminology used in recent literature on the Chyromyidae (Ebejer, 1998a, b).

RESULTS

Chyromya flava (Linnaeus, 1758)

Material examined. ITALY: SICILY: 3♂♂, 2♀♀, Catania, Randazzo, Monte Spagnolo, 1200 m, grassland, edge of woodland of *Acer*, *Castanea*, *Pinus*, 6.vi.1999, J.C. Deeming; 1♀, same data, but M.J. Ebejer; 1♂, 8♀♀, same data, but B. Merz; 1♂ and 1♀, Messina, Nebrodi, Cesarò, 1150 m, on *Tilia*, 8.vi.1999, J.C. Deeming; 1♀, Messina, Nebrodi, Troina, Elia River, 1000 m, 8.vi.1999, M.J. Ebejer; 8♂♂, 12♀♀, Catania, Randazzo, Lago di Gurrída, *Quercus*, *Populus*, 870 m, 11.vi.1999, M.J. Ebejer; 3♂♂, 5♀♀, same data, but B. Merz.

This is one of the commonest and most widespread species in the family. It is also known from North America and North Africa. It has been observed in good numbers on and beneath leaves of isolated broad-leaved trees, especially *Tilia* and *Populus*, growing at the edge of open woodland. New to Sicily.

Chyromya miladae Andersson, 1976

Material examined. ITALY: SICILY: 1♀, Catania, Randazzo, Lago di Gurrída, *Quercus*, *Populus*, 870 m, 11.vi.1999, M.J. Ebejer.

Described from the Czech Republic and later recorded from Slovakia, this species was recently listed as occurring in Britain (Chandler, 1998). This uncommon species is probably associated with broad-leaved woodland. New to Sicily.

Chyromya oppidana (Scopoli, 1763)

Material examined. ITALY: SICILY: 1♀, Catania, Randazzo, Lago di Gurrída, *Quercus*, *Populus*, 870 m, 11.vi.1999, M.J. Ebejer.

This species is as frequent as *flava* and it has the same wide distribution and habits. New to Sicily.

Gymnochiromyia fallax Ebejer, 1998

Material examined: ITALY: SARDINIA: 5♀♀, Nuoro reg., 120 m, 8 km E of Oliena, Hotel su Gologone, 16.vi.2002, B. Merz & M. Eggenberger.

This species is typically found in saltmarshes and coastal regions. It was described from Malta, but it is also found in Mallorca. New to Sardinia.

Gymnochiromyia flavella (Zetterstedt, 1848)

Material examined: ITALY: SARDINIA: 1♀, Baunei reg., Santa Maria Navarrese, 18.vi.2002, B. Merz & M. Eggenberger.

Widespread in Europe and probably all the Palaearctic including North Africa. New to Sardinia.

Gymnochiromyia inermis (Collin, 1933)

Material examined: ITALY: SARDINIA: 1♀, Villacidro reg., 600 m, Nuxeddu Mts., Montimannu forest, 12.vi.2002, B. Merz & M. Eggenberger; 1♀, Nuoro reg., Monte Albo 1120 m, Punta Catirina, 16.vi.2002, B. Merz & M. Eggenberger. SICILY: 2♂♂, 3♀♀, Messina, Nebrodi, Troina, Lago D'Ancipa, mixed woodland, 8.vi.1999, M.J. Ebejer; 1♀ same data, B. Merz; 1♀, Catania, Randazzo, Monte Spagnolo, 1200 m, grassland, *Acer*, *Castanea*, *Pinus*, 6.vi.1999, M.J. Ebejer; 1♀, same data, but B. Merz; 1♀, Messina, Bronte, Monte Minardo, *Quercus* forest, 345 m, 11.vi.1999, M.J. Ebejer; 1♀, same data, but J.C. Deeming.

When Collin (1933) described this species, he gave a number of examples of birds' nests from where it was reared. Deeming (1998) described the puparium and cephalopharyngeal skeleton. It is a common species and it is the most likely member of the genus to be found at some altitude and in broad-leaved woodland. New to Sardinia and Sicily.

***Gymnochiromyia mihalyii* Soós, 1979**

Material examined: ITALY: SARDINIA: 1 ♂, 5 ♀♀, Nuoro reg., Monte Albo 1120 m, Punta Catinina, 16.vi.2002, B. Merz & M. Eggenberger; 1 ♂, Dorgali, Rio Flumineddu, Gola di Gorropu, 15.vi.2002, B. Merz & M. Eggenberger. SICILY: 1 ♀, Catania, Etna, 3 km NW of Milo, *Castanea*, *Corylus*, 1000 m, 5.vi.1999, M.J. Ebejer.

Carles-Tolrá (1992) recorded this species from Spain and Merz (1997) recorded it from Switzerland. The present author has specimens from Britain, Turkey and Greece. It is probably widespread in several Mediterranean countries. Unlike *inermis*, it seems to prefer open countryside including dunes and cultivated fields. New to Sardinia and Sicily.

***Aphaniosoma bifalcatum* sp. n.**

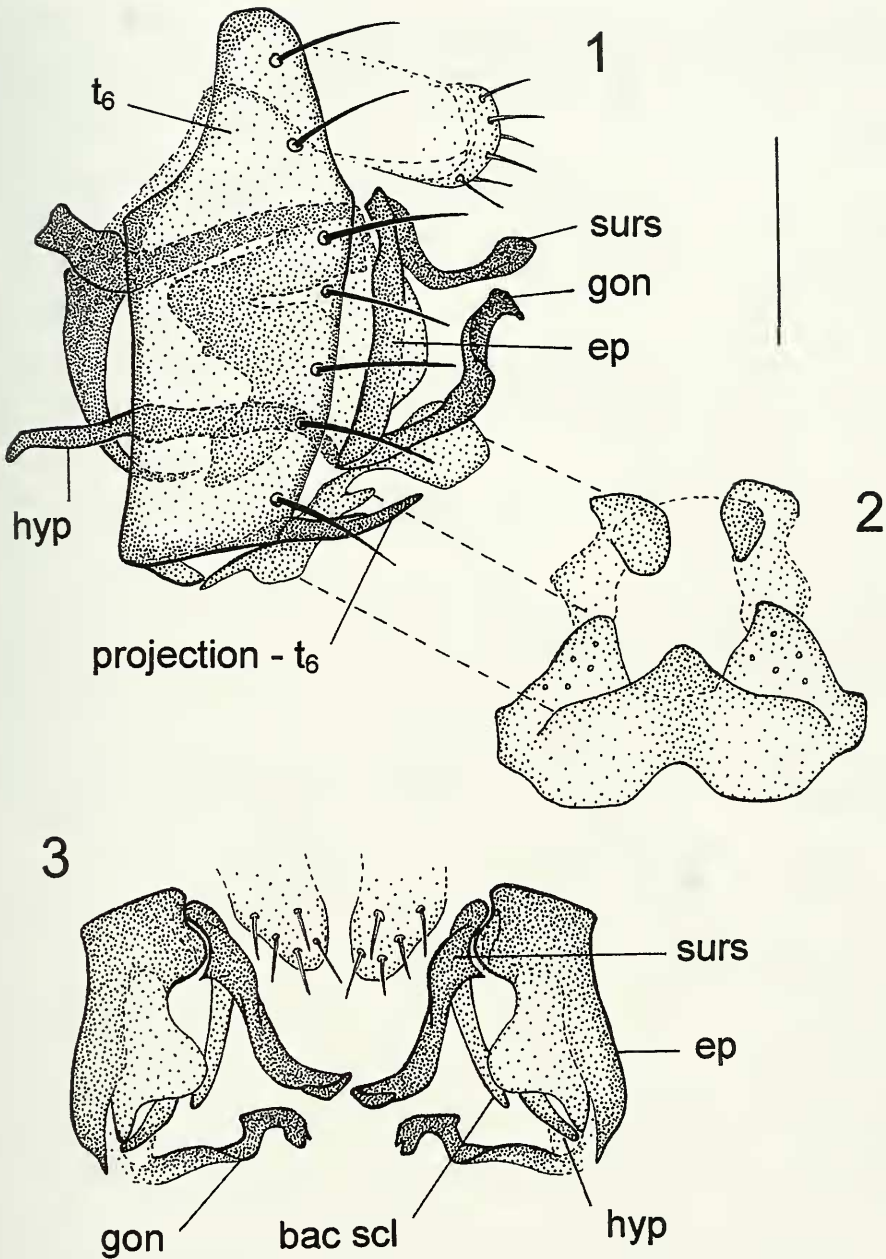
Figs 1-3

Material examined: Holotype: ♂, ITALY: SARDINIA: Dorgali reg., 350 m, Cala Luna South of Cala Gonone, 17.vi.2002, B. Merz & M. Eggenberger (MHNG). Paratypes: 1 ♂, 2 ♀♀, same data and depository; 1 ♂, same data, but in MJE; 1 ♂, Bosa reg., 0 m, Bosa Marina, 20.vi.2002, B. Merz & M. Eggenberger (MHNG). SICILY: 1 ♂, 1 ♀, Siracusa, Noto, Vendicari, coastal marshes and dunes, M.J. Ebejer (MJE). FRANCE: 2 ♂♂, 4 ♀♀, Montpellier, Lotte salt-marsh, 23.viii.2000, J.C. Deeming (NMWC).

A dark brownish black species of the *approximatum* Becker group characterized by a pair of long frontal setae anterior to the ocellar triangle and long narrow dark surstyli.

Holotype, male. *Head:* yellow, ocellar triangle black, occiput deep black except for narrow, yellow postocular margin: frons at vertex about half width of head; frons, antenna, gena and mouth parts all yellow; third antennal segment with distinct setulae anteriorly, arista black except for yellow basal segments; gena about half as high as eye; chaetotaxy: a pair of very long frontal setae present on frons in front of ocellar triangle and 8 pairs of pale setulae scattered on frons, 2 long orbitals and 2 shorter ones in front of these, 1 internal and 1 external vertical.

Thorax: black with dark grey dusting becoming brownish in prescutellar depression and on scutellum; scutellum with pale apical margin; humerus and notopleural depression clear yellow; pleura all dark brownish black except for narrow yellow margins to sutures; metanotum black; chaetotaxy: 1 humeral, 1 posthumeral, 2 notopleural, the anterior, strongly developed – about twice as long as posterior; 2+5 dorso-centrals, but only the prescutellar strong, 2+4 acrostichals, 3 intra-alar, 1 post-alar and 0 supra-alar, 2 pairs of marginal scutellars; 1 mesopleural with 4 short setulae in vertical row below this, 1 sternopleural at posterior upper corner, and 4 setulae in vertical row at anterior part; stigmal setula present. Wing: broad, hyaline with anterior cross vein pale yellow and other veins all brownish, becoming darker towards apex; distance between cross veins about 1.2 times length of posterior cross vein; distance between R_{2+3} and R_{4+5} on costa is half that between R_{4+5} and M_{1+2} . Haltere:



FIGS 1-3

Aphaniosoma bifalcatum sp. n., male terminalia. 1, hypopygium lateral aspect; 2, pregenital sternite; 3, hypopygium posterior aspect; abbreviations: bac scl = bacilliform sclerite, ep = epandrium, gon = gonostylus, hyp = hypandrium, surs = surstylus, t6 = sixth tergite; scale bar = 0.1mm.

yellow. Legs: all yellow except for 5th tarsal segment of all legs – this being broadly infuscated around margin; hind coxa simple and brownish at base.

Abdomen: tergites black with narrow pale posterior margins; epandrium with shiny pale brown spot at base near cerci, which are relatively long, yellow and pale-haired.

Hypopygium (Figs 1-3): typical of the *approximatum* Becker - *creperum* Collin group, having an internalised and reduced epandrium with prominent dark surstyli visible externally; distiphallus poorly sclerotized and relatively amorphous; bacilliform sclerite and gonostylus prominent, darkly pigmented and heavily sclerotized; gonostylus articulates with posterior arm of hypandrium very close to where this articulates with inferior margin of epandrium.

Female. As in male, but without secondary sexual characters; apex of abdomen with tergite 7 strongly curved on sides to form a broad and short conical cavity with the cerci deep within; apical 2 sternites, in middle third, heavily sclerotized and dark shiny brown pigmented.

Variation. The males from France and the one from Bosa in Sardinia have a greyish yellow scutellum and a dusky yellow prescutellar area; the grey mesonotal pattern fades posteriorly except in the middle where it reaches the scutellar margin and, laterally, the yellow area extends forwards along the intra-alar line; the pleura have the sutures more broadly yellow and the hind marginal bands of the tergites are broader, especially laterally. The colour variations are present also in the females from France. A male paratype from France was dissected and is identical to the paratype from Sardinia, which is illustrated in the figure.

Similar species. The nominate form resembles the dark species of the *claridgei* Ebejer group, whereas the paler form resembles *grisescens* Ebejer and *proximum* Ebejer. If the surstyli are properly extruded, then *bifalcatum* can be recognised because these structures are sinuous and the apex is somewhat spatulate.

Etymology. The curved surstylus together with the sinuate gonostylus gives an appearance of two sickles (Latin singular: falx) on each side of the postabdomen.

Aphaniosoma claridgei Ebejer, 1995

Material examined: ITALY: TOSCANA: 3 ♂♂, 7 ♀♀, Parco Nazionale della Maremma, Collelungo, Bonifica Canal, 2.ix.2003, P. Gatt; 2 ♂♂, 15 ♀♀, plus 8 ♀♀ in alcohol, Parco Nazionale della Maremma, Bocca D'Ombrone estuary, saltmarsh, 2.ix.2003, P. Gatt; 3 ♂♂, 4 ♀♀, Parco Nazionale della Maremma, Collelungo, beach and dunes, 2.ix.2003, P. Gatt. SARDINIA: 3 ♂♂, 1 ♀, Dorgali reg., 350 m, Cala Luna South of Cala Gonone, 17.vi.2002, B. Merz & M. Eggenberger; 3 ♂♂, 3 ♀♀, Bosa reg., 0 m, Bosa Marina, 20.vi.2002, B. Merz & M. Eggenberger; 13 ♂♂, 3 ♀♀, Cuglieri Reg., Sinis Peninsula, 0 m, Capo Mannu, 21.vi.2002, B. Merz & M. Eggenberger. SICILY: 6 ♂♂, 3 ♀♀, Siracusa, Noto, Vendicari, coastal marshes and dunes, M.J. Ebejer; 11 ♂♂, 16 ♀♀, same data, but B. Merz; 2 ♂♂, 5 ♀♀, same data, but J.C. Deeming.

A typical salt marsh species with a preference for coastal areas, it is widespread in the Mediterranean. It is often the dominant species of the genus in such habitats. There are many similar species in this group. New to Italy: Sardinia and Sicily.

Aphaniosoma collini Lyneborg, 1973

Material examined: ITALY: SARDINIA: 2 ♂♂, Bosa reg., Bosa Marina, 0 m, 20.vi.2002, B. Merz & M. Eggenberger.

This species was described from Spain. It is common in Tunisia, Mallorca, France and Malta and may be one of the more widespread species in the group with projections on the hind trochanter in the male. New to Sardinia.

***Aphaniosoma egregium* Ebejer, 1998**

Material examined: ITALY: SICILY: 1 ♂, Siracusa, Noto, Vendicari, coastal marshes and dunes, J.C. Deeming (MJE).

This is a distinctive, but one of the most uncommon species of *Aphaniosoma*. Other than the types, very few specimens of this species have been seen. New to Sicily.

***Aphaniosoma grisescens* Ebejer, 1998**

Material examined: ITALY: SARDINIA: 2 ♂♂, Dorgali reg., 350 m, Cala Luna South of Cala Gonone, 17.vi.2002, B. Merz & M. Eggenberger; 1 ♂, Baunei reg., Santa Maria Navarrese, 18.vi.2002, B. Merz & M. Eggenberger; 2 ♂♂, 1 ♀, Cuglieri Reg., Sinis Peninsula, 0 m, Capo Mannu, 21.vi.2002, B. Merz & M. Eggenberger; 3 ♂♂, Bosa reg., 0 m, Bosa Marina, 20.vi.2002, B. Merz & M. Eggenberger.

Described from Tunisia, it is also known from Malta. Not a common species, but it can easily be confused with *claridgei* and *proximum*. New to Sardinia.

***Aphaniosoma melitensis* Ebejer, 1993**

Material examined: ITALY: TOSCANA: 1 ♂, 2 ♀♀, Parco Nazionale della Maremma, Collelungo, Bonifica Canal, 2.ix.2003, P. Gatt; 1 ♀, Parco Nazionale della Maremma, Bocca D'Ombrone estuary, saltmarsh, 2.ix.2003, P. Gatt. SARDINIA: 2 ♂♂, 8 ♀♀, Dorgali reg., 350 m, Cala Luna South of Cala Gonone, 17.vi.2002, B. Merz & M. Eggenberger; 2 ♀♀, Baunei reg., Santa Maria Navarrese, 18.vi.2002, B. Merz & M. Eggenberger; 8 ♂♂, 1 ♀, Bosa reg., 0 m, Bosa Marina, 20.vi.2002, B. Merz & M. Eggenberger; 1 ♂, 1 ♀, Cuglieri Reg., Sinis Peninsula, 0 m, Capo Mannu, 21.vi.2002, B. Merz & M. Eggenberger. SICILY: 3 ♂♂, 3 ♀♀, Siracusa, Noto, Vendicari, coastal marshes and dunes, M.J. Ebejer; 2 ♂♂, 16 ♀♀, same data, but B. Merz; 2 ♂♂, 8 ♀♀, same data, but J.C. Deeming.

This is another common species known from several European countries where it inhabits flushed meadows, marshes and dunes. It is a polymorphic species with small very dark forms appearing quite different from the large pale specimens. There is also variation as to how rounded are the apical projections on the ventral aspect of the fourth tergite in the male. All intermediates exist within the same population if a large enough sample is examined. New to Sicily and Sardinia.

***Aphaniosoma micromacro* Carles-Tolrà, 2001**

Material examined: ITALY: TOSCANA: 2 ♂♂, 6 ♀♀, Parco Nazionale della Maremma, Collelungo, beach and dunes, 2.ix.2003, P. Gatt.

Described from Spain, this species is one of the very few with modified tarsi. It is also known from Malta. New to Italy.

***Aphaniosoma propinquans* Collin, 1949**

Material examined: ITALY: SICILY: 2 ♂♂, 2 ♀♀, Siracusa, Noto, Vendicari, coastal marshes and dunes, M.J. Ebejer.

Originally described from Britain, this species is now known to have a wide distribution in Europe. It is relatively easy to identify in both sexes and so it should not be overlooked. New to Sicily.

Aphaniosoma proximum Ebejer, 1998

Material examined: ITALY: SARDINIA: 1 ♀, Bosa reg., 0 m, Bosa Marina, 20.vi.2002, B. Merz & M. Eggenberger; 2 ♂♂, Cuglieri Reg., Sinis Peninsula, 0 m, Capo Mannu, 21.vi.2002, B. Merz & M. Eggenberger. SICILY: 6 ♂♂, 7 ♀♀, Siracusa, Noto, Vendicari, coastal marshes and dunes, M.J. Ebejer; 1 ♂, 4 ♀♀, same data, but B. Merz.

This species belongs to the *approximatum* Becker group. It is difficult to identify without dissection. It is probably widespread in the Mediterranean, but overlooked. New to Sardinia and Sicily.

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